

# **TASK ORDER REQUEST FOR PROPOSAL BASE YEAR 2005**

for the Southern California Emergency Watershed Protection Priority  
Community Change-Detection Project

**Task Order Solicitation Number: TO-EWP05-4**  
**AERIAL PHOTOGRAPHY SERVICES**



U.S. DEPARTMENT OF AGRICULTURE  
FARM SERVICE AGENCY  
AERIAL PHOTOGRAPHY FIELD OFFICE

#### **NOTICE TO OFFEROR**

Proposals submitted in response to this RFP must be identified with the following information labeled on the outside of the mailing package:

SOL.NO: TO-EWP05-4  
DUE DATE: 1-SEP-05, 4:30 PM  
RECEIVING OFFICE: CONTRACTING

Mail To: AERIAL PHOTOGRAPHY FIELD OFFICE  
CONTRACTING OFFICER  
2222 WEST 2300 SOUTH  
SALT LAKE CITY UTAH 84119-2020

## **NOTICE TO OFFERORS :**

PLEASE NOTE THE FOLLOWING SPECIAL TASK ORDER INSTRUCTIONS:

This simplified task order RFP is for the Base Year, covering the 2005 performance period, under the multi-award fixed-price IDIQ contract established in the base year, 2005.

Task Order awards will be made based on procedures established in the original contract, Section L-3.

Contractors are required to respond to the task order statement of work similar to the original RFP covering terms of pricing and current performance capacities.

## TASK ORDER REQUEST FOR PROPOSAL

### SOUTHERN CALIFORNIA EMERGENCY WATERSHED PROTECTION PRIORITY COMMUNITY CHANGE-DETECTION PROJECT (SCEWPCD)

#### 1.0 2005 SCEWPCD AERIAL PHOTOGRAPHY SERVICES

Furnish aerial photography and orthorectification services and related supplies in accordance with the requirements, specifications, terms, conditions, clauses, and provisions specified herein and in the original indefinite-delivery, indefinite-quantity contract, USDA-NRCS-2-05 (Small Area Aerial Photography), effective for the periods stated in the schedule.

#### 1.1 Task Order Pricing Proposal

SOUTHERN CALIFORNIA EMERGENCY WATERSHED PROTECTION PRIORITY COMMUNITY CHANGE-DETECTION PROJECT (SCEWPCD)				
AERIAL PHOTOGRAPHY AND ORTHORECTIFICATION SERVICES		UNIT	UNIT PRICE	TOTAL AMOUNT
QUANTITY	1,399	LINEAR MILE	\$	\$
<b>Authorized Signature:</b>			<b>Date:</b>	
<b>PLEASE NOTE: The minimum unit of offer is the complete project including all areas within the project. Price includes aerial photography acquisition, scanning services, orthorectification services and all contract deliverables.</b>				

#### 1.2 Location Description of SCEWPCD Areas

The SCEWPCD areas are located in three (3) National Forests within four (4) Southern California Counties. There are a total of nine (9) areas ranging in size from 31 sq. mi. (80 sq. km.) to 565 sq.mi. (1464 sq. km.) The areas are a mixture of forest and private lands. This is block flying at a nominal 1:15,840 scale, with pre-established flight lines and exposure points, similar in format to traditional aerial photography acquisitions. A standard 6 inch (153mm) focal length aerial camera lens is required. The aerial photography is to be acquired snow free, "leaf-on or leaf-off", with **physical coverage only**. See Exhibit 1, 2005 SCEWPCD Area Location Map.

#### 2.0 SCEWPCD PROGRAM

The general scope of this task order is to procure precise vertical, high resolution, natural color aerial photography and associated orthorectification services for detection of areas where Pine Bark Beetles have infected and killed many trees and created a major fire hazard. The areas of concern include private property, where tree removal is beyond the expense of the owners. The imagery will provide current resource management information to the Natural Resources Conservation Service (NRCS) and its partners. The imagery will be processed using "change-detection" techniques to identify areas where dead and dying trees are located.

## 2.1 Contract Deliverables

The deliverables for this task order consist of the following:

- (a) One Orthorectified Compressed Area Mosaic for each of the nine (9) areas. (MrSid MG3 format – 15:1 Compression)
- (b) Original color positive aerial film.
- (c) One set of color positive contact prints.
- (d) Spot index(s) in digital (GeoTIFF) format.
- (e) Scanned imagery from each exposure.
- (f) Digital Photo Center Data File
- (g) Metadata File(s)

## 3.0 PROJECT REQUIREMENTS

### 3.1 Aerial Photography Technical Requirements

- (a) Nominal Photographic Scale: 1:15,840
- (b) Minimum Sun Angle: 35 Degrees
- (c) Aerial Camera Focal Length Lens: 6 inch (153mm) with Antivignetting filter.
- (d) Aerial Film: Color Positive Aerial Film (Brand Names: Kodak Aerochrome III MS Film 2427, Agfa Aviphot Chrome 200 PEI, or equivalent). (See Section 6.0).
- (e) Area Information: The following chart provides general information for each of the nine (9) areas:

Area #	Flight Lines	Area Size Square Kilometers	Area Size Square Miles	Flight Line Distance - Kilometers	Flight Line Distance - Miles
1	12	354.8	137.0	222.7	138.4
2	34	1,463.5	565.1	821.8	510.7
3	5	79.8	30.8	53.3	33.1
4	11	262.5	101.4	168.0	104.4
5	5	94.2	36.4	49.9	31.0
6	7	130.7	50.5	79.5	49.4
7	12	315.6	121.9	163.3	101.5
8	8	276.5	106.8	140.6	87.4
9	19	1,146.0	442.5	551.4	342.7
Totals	113	4,123.6	1,592.4	2,250.5	1,398.6

### 3.2 Approximate Photographic Period: **Date of Award through October 15, 2005.**

### 3.3 Project Flight Plan Description

- (a) All SCEWPCD Areas shall be flown at flight altitudes designed to achieve a nominal photographic scale of 1:15,840, with the nominal flight altitude above ground of 2,414 meters (7,920 feet) with a 6 inch (153mm) focal length lens. The estimated maximum flying height above mean sea level is 4,755 meters (15,600 feet).
- (b) Deviation from the specified flight altitude shall not exceed 2% low (48 meters, 157 feet) or 3% high (143 meters, 469 feet).

### 3.4 Aerial Film Scanning Requirements:

- (a) The requirement for film scanning is 20 microns, approximately 1,282 dots per inch (DPI) using a photogrammetric quality scanner.
- (b) The scans are to be delivered as Tagged Image Format File(s) (.tif(s)) on External Combo USB2/IEEE1394 (Firewire) hard drives.
- (c) Refer to the original contract Section C-7, Aerial Photography Scanning.

### 3.5 Orthorectification Requirements:

- (a) The requirement is for digital orthorectification of the scanned aerial photography. The resulting orthorectification shall match the National Standards for Spatial Data Accuracy. Refer to the original contract Section C-8, Digital Orthorectification.
- (b) The output resolution of the orthorectified imagery shall have a ground sample distance of one (1) foot (.3 meter.) The orthorectified imagery is to be delivered as compressed area mosaics, one for each of the nine (9) areas. The mosaics are to be compressed at a 15 to 1 ratio, using LizardTech MrSid MG3 format and delivered on External Combo USB2/IEEE1394 (Firewire) hard drive(s.)
- (c) Please note that the **individual orthorectified files are not** a required deliverable for this Task Order.

## 4.0 GOVERNMENT-FURNISHED PROPERTY

Pursuant to the Government-Furnished Property (GFP) clause (see Section I-7) the Government shall furnish the item(s) of property listed below as GFP to the Contractor.

### 4.1 Exposure Data

The Contractor will be furnished upon award, one (1) data set on CD-ROM containing the official Exposure Data. For each of the nine (9) areas the data provided will be one (1) Photo Flight Statistics File in .wri format; one (1) Exposure Location File in .csv format; and one (1) Flight Line Map File in .pdf format. The government will also provide a shape file and its associated files for the project. The data set contains latitude/longitude coordinates projected in Degrees, Minutes, Seconds and Decimal Seconds using the **WGS84 datum**. The data also have area identification information. See Exhibit 6, Sample Photo Flight Statistics File, Exhibit 7, Sample Exposure Location File, and the Flight Line Map Attachments.

### 4.2 Digital Spot Index Files

The Contractor will be furnished upon award Digital Raster Graphic (DRG) files at 1:100,000 scale in TIFF (.tif) format, with TIFF World Files (.tfw) to be used as base imagery for the spot indexes required by the Task Order. There are six (6) DRG files in the set.

## 5.0 DELIVERY SCHEDULE

All delivery materials required for all original and USDA ordered reflight photography for this project shall be shipped as soon as completed but not later than 30 calendar days after the photographic season has ended, or any season extension thereof. The required delivery schedule

for the contract material, established 30 days from the end of the photographic season, is **November 15, 2005**.

## 6.0 AERIAL FILM REQUIREMENTS

### 6.1 Composition of Film Roll

All aerial film on any one roll shall have the same roll number and shall consist only of exposures made with the same camera system (lens, cone, and magazine). Every exposure within a roll of film shall be titled regardless if it is rejected or unused for coverage. Splicing of two or more partial rolls of film together on the same spool is **not** permitted.

One (1) meter (3 feet) of blank or unused film shall be left beyond the first and last used exposure on each roll or segment to serve as leader and trailer. Some unexposed film must be retained at the beginning or end of a roll for the step wedge which is required for controlled processing.

Film spools having a flange diameter of approximately 13.2cm (5-3/16 inches) shall be used, and only that length of film which can be wound on a spool without strain, leaving at least 3.2mm (1/8 inch) of flange exposed, shall be placed on each spool.

### 6.2 Required Aerial Film Titling

Each exposure shall be clearly titled on the **northern** edge of the film in accordance with the following format example sketch and required project data:

+	06	037	Area 1	Line 1	USDA-NRCS	+	16	SCEWPCD	06-12-05	105-207	+
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State Code: The two-digit code representing the state designation (All of California will be '06').

County Code: The three-digit Federal Information Process Standards (FIPS) code for the county: Los Angeles – 037; Riverside – 065; San Bernardino – 071; San Diego – 073

Area: Numeric Area Designator: Area 1, Area 2, through Area 9

Line: Flight Line Number within the area as designated on the individual flight line map for it: Line 1, Line 2, Line 3, etc.

Agency designator for all photos: USDA-NRCS

Scale: Nominal photographic scale represented by two digits to the nearest thousand (16 = 1:15,840).

Project Code: SCEWPCD

Date: Month-Day-Year in standard numeric notation (MM-DD-YY).

Roll: Number in series, followed by the current contract fiscal year (2005), (i.e., 105, 205, 305).

Exposure: Number in series beginning with 1, not 001 or 01.

*Every exposure within a roll shall be titled regardless if unused or used, rejected or accepted. No exposure shall be removed from the roll unless authorized by the Contracting Officer or representative.*

### 6.3 Film Containers

All rolls of aerial film shall be contained in Contractor furnished sturdy cylindrical plastic cans.

### 6.4 Film Can Labels

Film can labels shall be securely affixed to the side of each can and positioned so that the label can be read when the film can is standing with the lid end up. Labels will be furnished by the Government upon contract award. The Contractor shall type or neatly letter each film can label with the required information according to the format example. See Exhibit 3, Sample Film Can Label.

## 7.0 INSPECTION PRINTS

Color contact inspection prints shall be made from either the film or the scanned imagery and furnished for inspection. Inspection prints shall be of such quality to bring out all the details of the film image and to clearly indicate the acceptability of the coverage and technical requirements.

### 7.1 Inspection Print Titling

All film titling, see Section C-6.2, Required Film Titling, shall fully visible and readable on the inspection prints.

### 7.2 Color Balance Samples

The Contractor is required to provide color balance samples for approval prior to production of the inspection prints.

## 8.0 DIGITAL PHOTO-CENTER AND METADATA FILE

### 8.1 Photo-Center Data File Description

Contractor shall prepare a digital photo-center data file for all aerial photography acquired under this task order. The file(s) shall be provided in coma delimited ASCII text format. The latitude longitude coordinates shall be expressed in decimal degrees with five (5) decimal places of precision (31.50255, -87.10906), formatted to NAD83 datum, and be accurate within ¼ mile of true photo center location. Higher accuracies obtained through use of GPS technology are desirable but not required. The photo-center data shall include the following attributes:

<u>DESCRIPTION</u>	<u>MAXIMUM NUMBER OF CHARACTERS IN FIELD</u>
Project Code	7
Film Roll Number	4*
Exposure Number	3
Exposure used for creation of Mosaic (Y/N)	1
Date of Exposure (YYYYMMDD)	8
Time of Exposure (HH:MM:SS)	8
County FIPS	3

Area Number (1 through 9)	1
Flight Line Number (within area)	2*
Camera Lens Serial Number	10
Calibrated Focal Length in millimeters	7
Flight Altitude in meters at camera (mmmm.mm)	7*
Latitude Coordinate (DD.DDDDD)	8
Longitude Coordinate (-DDD.DDDDD)	10

Example:

**SCEWPCD,0105,123,Y,20050921,14:24:36,071,2,05,12345678,153.05,3220.45,34.15255,-117.37255**

**\* These fields must be padded with leading zeros.**

## 8.2 Metadata File Description

Contractor shall include metadata files for each of the nine (9) areas, produced using the USDA Metadata Tool found at:

<http://www.gis.sc.egov.usda.gov/software/tools/arcgis/metadata-tool.html>

## 9.0 DIGITAL SPOT INDEX OF AERIAL PHOTOGRAPHY

The Contractor shall prepare a digital spot index of aerial photography on the digital raster graphic file(s) (DRGs) furnished by USDA for the project. The scale of the DRG(s) is 1:100,000 and number of files are specified in Section 4.2, Digital Spot Index Files, of this task order. The Contractor is to determine the location of individual photo centers to spot and identify them on the vector graphic file(s). (See Exhibit 2, Figure (a) for sample spot index.)

### 9.1 Labeling Requirements

All delineations and lettering shall be in solid black with all fonts in an Arial style. Line width and lettering size requirements while viewing the digital spot index at 100% scale are as follows:

FEATURE	SIZE	LINE WIDTH
Flight Line Width		0.8mm (0.030")
Tickmark Length	3.8mm (0.15")	0.8mm (0.030")
Circle Diameter	3.8mm (0.15")	
Font Size	2.5mm (0.10")	"Normal"

### 9.2 Layout Instructions

Locations of photo centers are to be shown on the map(s) by solid-filled circles and tick marks. All photo centers which require roll and exposure numbers, as specified in Section 9.3(a) below, shall be shown as a solid-filled circle. Draw the flight line by connecting the circles and plot the in-between tick marks proportionately in their approximate locations.

Location of photo centers shall be plotted within ¼ mile (400m) of the recorded location. The individual task order will specify the accuracy requirements for the recorded location. Plotted coverage shall show photo centers of all terminal exposures and flight breaks. Excess coverage outside of the specification requirements shall not be plotted on the spot index.

### 9.3 Lettering Instructions

Roll and exposure numbers shall be located next to each of the pertinent photo centers as shown on the spot index sample in Exhibit 2, Figure (a). The Government prefers to have the lettering split with the roll number and exposure number on the left and right side of the flight line, respectively. Leading zeros "0" shall not be used as part of any numbering. Letter the roll and exposure numbers of the following photo centers which are shown as solid circles:

- (a) Terminal exposures of every flight segment including flight line terminal points, flight breaks, and reflights. Where breaks in flight lines occur, numbering for each overlapping segment shall be alternated to opposite sides of the flight line to avoid congestion.
- (b) Every fifth (5th) exposure (those with the last digit ending in five or zero) shall be numbered. Flight lines shall be designed by placing the flight line number (LINE #) approximately ½ inch (13mm) from the terminal photo center at each end of the flight line. Flight lines shall be numbered as indicated on the raster graphic file(s). If there are more than two maps covering the project area, line numbers shall be placed on each intermediate map and at each end of the flight line to maintain continuity.

Where congestion occurs between indexed lettering and map detail, set a clear background area on the raster graphic file where roll, exposure, and flight line numbers occur to insure sharp reproduction of indexed information.

### 9.4 Title Block

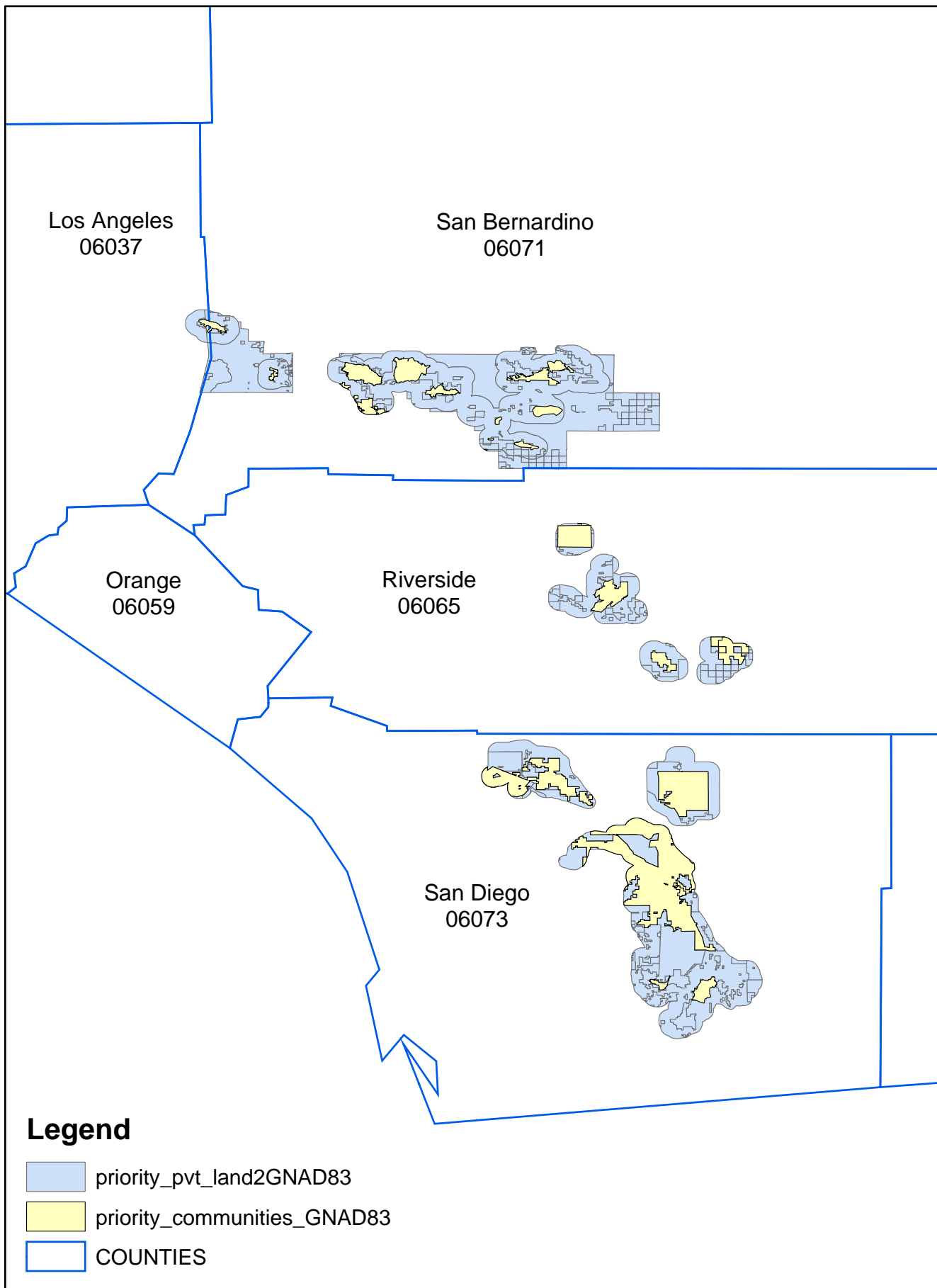
The Contractor shall create a title block and insert the following items in the designated spaces: project name and code, film scale, type of film used, direction of flight, solicitation and item number, and name of Contractor. In the appropriate space, list of all rolls of acceptable photography appearing on the index sheet by: camera lens number, calibrated focal length of the lens, and calendar year flown. If more than one camera system is used, separate each camera and related information with a vertical line. (See Exhibit 2, Figure (b).)

### 9.5 File Format and Naming Convention

The digital spot index shall be created as a Georeferenced TIFF image (GeoTiff [.tif]) using the TIFF 6.0 Specification. Use the following naming convention: index\_[project code]\_[sheet1of#]\_[date created as [yyyymmdd]].tif (Example: index\_SCEWPCD\_1of6\_20051021.tif)

LIST OF EXHIBITS

EXHIBIT	DESCRIPTION	PAGE
Exhibit 1	2005 SCEWPCD Area Location Map (1 page)	9
Exhibit 2	Sample Spot index/Title block (2 pages)	10-11
Exhibit 3	Sample Film Can Label (1 page)	12
Exhibit 4	Current Equipment Lists and Conflicting Work (1 page)	13
Exhibit 5	Progress Report (1 page)	14
Exhibit 6	Sample Photo Flight Statistics File	15
Exhibit 7	Sample Exposure Location File	16
ATTACHMENTS	Flight Line Maps for each of the Nine (9) Areas (9 pages)	



## SAMPLE SPOT INDEX

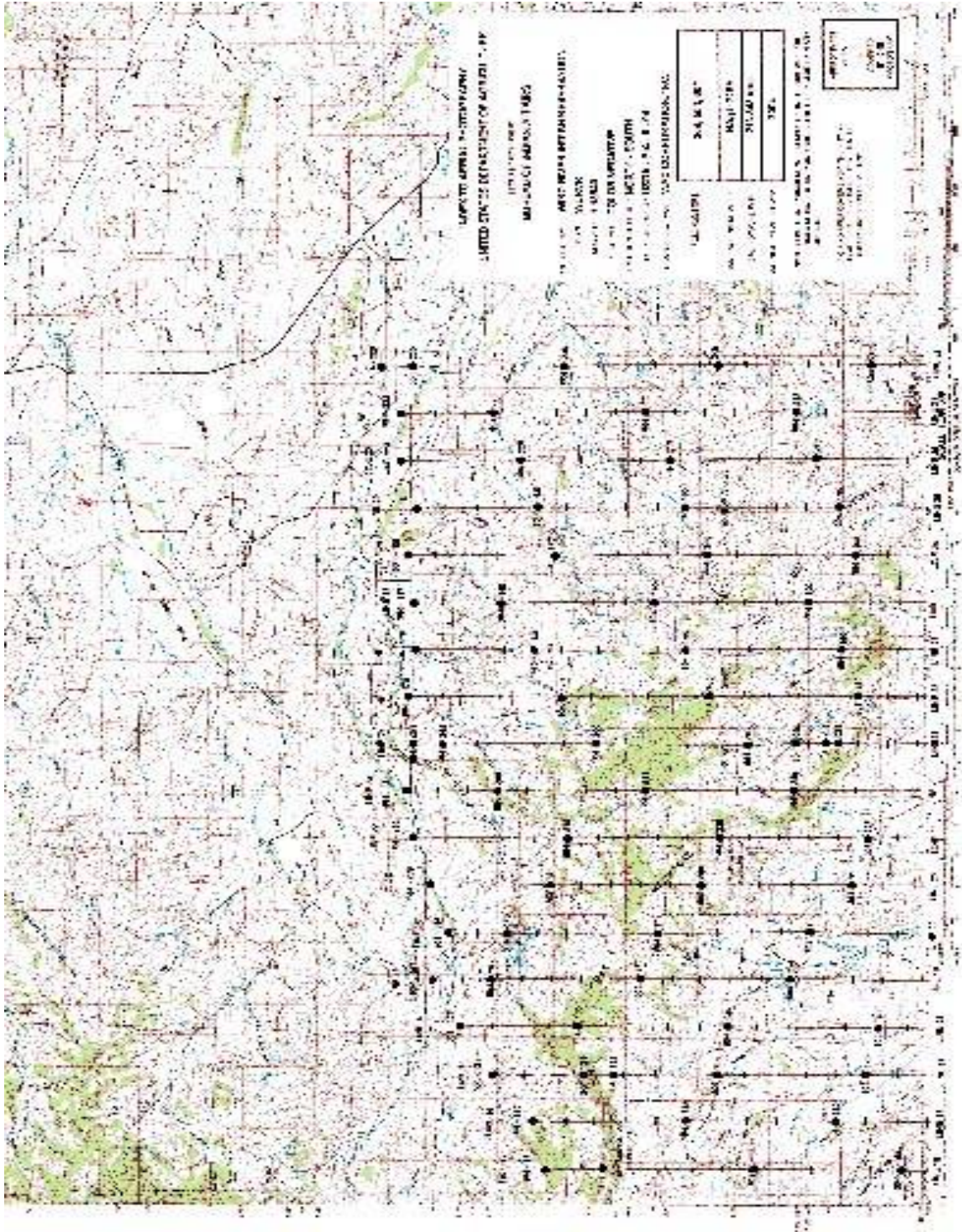


EXHIBIT 2 (b)  
SAMPLE TITLE BLOCK FOR SPOT INDEX

<b>INDEX TO AERIAL PHOTOGRAPHY</b>  <b>UNITED STATES DEPARTMENT OF AGRICULTURE</b>  SECURED FOR USE BY:  <b>NATURAL RESOURCES CONSERVATION SERVICE</b>			
PROJECT NAME:	<b>South California Emergency Watershed Protection Priority Community Change-Detection</b>		
CODE:	<b>SCEWPCD</b>		
FILM SCALE:	<b>1:15,840</b>		
FILM TYPE:	<b>COLOR POSITIVE</b>		
DIRECTION OF FLIGHT:	<b>NORTH – SOUTH</b>		
SOLICITATION NO:	<b>USDA-NRCS-2-05</b>		
CONTRACTOR NAME:	<b>WORLD AERIAL SURVEYS, INC</b>		
ROLL NUMBERS:	<b>105, 205, 305, 405, 505, 605, 705, 805, 1205</b>	<b>905, 1005, 1105, 1305, 1405, 1505, 1605</b>	
CAMERA LENS NUMBER:	<b>12345678</b>	<b>87654321</b>	
CAL. FOCAL LENGTH:	<b>152.403mm</b>	<b>152.368mm</b>	
CALENDAR YEAR FLOWN:	<b>2005</b>	<b>2005</b>	
NOTE: FLIGHT LINE NUMBERS WHICH APPEAR ON THE MAP ARE FOR ORIENTATION USE ONLY AND SHOULD NOT BE INCLUDED IN ANY ORDER.			
TO FIND AREA COVERED BY ONE PHOTO, PLACE CROSS (+) OVER PHOTO CENTER TICK OR CIRCLE ON FLIGHT LINE.		<div style="border: 1px solid black; width: 150px; height: 100px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">             APPROXIMATE AREA + COVERED BY ONE PHOTOGRAPH           </div>	

EXHIBIT 3  
SAMPLE FILM CAN LABEL

FILM CAN LABEL			
SOLICITATION NO. AND PROJECT ITEM NO.  <b>USDA-NRCS-2-05, Item 9</b>			ROLL NO.  <b>205</b>
STATE  <b>CALIFORNIA</b>	NOMINAL SCALE  <b>1:15,840</b>	FILM TYPE  <b>Color Positive</b>	
LENS NO. <b>Uag #####</b>	CAMERA NO. <b>#####</b>	CAMERA MAKE <b>Zeiss</b>	
CALIBRATED FOCAL LENGTH <b>153.000</b>	USGS REPORT NO. <b>OSL/####</b>	USGS REPORT DATE <b>24-MAY-04</b>	
PROJECT NAME	CODE	EXPOSURE NOS.	DATE EXPOSED
<b>So. Calif. Emergency Watershed Protection</b>	<b>SCEWPCD</b>	<b>1-155</b>	<b>09-SEP-2005</b>
	<b>SCEWPCD</b>	<b>156-238</b>	<b>10-SEP-2005</b>
CONTRACTOR:  USDA-FSA-AERIAL PHOTOGRAPHY FIELD OFFICE  APFO-55 (2000)			

**INSTRUCTIONS: PLEASE COMPLETE ALL BOXES THAT ARE APPLICABLE**

EXHIBIT 4CURRENT EQUIPMENT LIST AND CONFLICTING WORKINCOMPLETE CONTRACTS AS OF DATE OF PROPOSAL:

<i>Indicate by Linear Miles</i>	Remaining Work - Summer	Remaining Work - Winter
U.S. Government Contracts		
All Other Contracts		

AIRCRAFT TO BE USED IN COMPLETION OF ITEM(S) IN THIS TASK ORDER:

Make/Model	Registration #	Operating Ceiling	Bidder Owned (check appropriate block)
			<input type="checkbox"/> Yes <input type="checkbox"/> No *
			<input type="checkbox"/> Yes <input type="checkbox"/> No *
			<input type="checkbox"/> Yes <input type="checkbox"/> No *

\* If the aircraft is/are not offeror owned, a written statement of availability from the owner of the aircraft must be enclosed. See Section C-2.

CAMERA(S) TO BE USED IN COMPLETION OF ITEM(S) IN THIS TASK ORDER:

Current calibration report(s) must be enclosed or on file at the Aerial Photography Field Office.

Make/Model	Lens Number	Magazine Number	Bidder Owned (check appropriate block)
			<input type="checkbox"/> Yes <input type="checkbox"/> No *
			<input type="checkbox"/> Yes <input type="checkbox"/> No *
			<input type="checkbox"/> Yes <input type="checkbox"/> No *

\* If the camera(s) is/are not offeror owned, a written statement of availability from the owner(s) of the camera(s) must be enclosed. See Section C-2.

**EXHIBIT 5**

U.S. DEPARTMENT OF AGRICULTURE

**AERIAL PHOTOGRAPHY PROGRESS REPORT****INSTRUCTIONS**

This report shall be prepared only for days that performance is accomplished in acquiring project photography. Reports shall be submitted to the government office E-mail address indicated below no later than the day following performance. Reports shall be submitted in space delimited ASCII text format. A list of the exposures flown shall be indicated by their county, area, flight line, and grid coordinates (in decimal degrees), and shall reflect only the previous day's performance. A cumulative progress record of all exposures acquired shall be maintained by the Contractor.

**2005 SCEWPCD PROGRESS REPORT  
TO-EWP05-4****TO:**

Geoff Gabbott, Contracting Officer  
Aerial Photography Field Office  
E-mail Address: [aerialflyingreports@apfo.usda.gov](mailto:aerialflyingreports@apfo.usda.gov)

**FROM::**

Name  
Company  
Telephone Number

**PERFORMANCE RECORD:**

Date Acquired: 06-SEP-05

Exposures Acquired:

071 5 1 33.59833 -116.65250  
071 5 1 33.62083 -116.65250  
071 5 1 33.64306 -116.65250  
071 5 2 33.55361 -116.62389  
071 5 2 33.57611 -116.62389  
071 5 2 33.59833 -116.62389  
071 5 2 33.62083 -116.62389  
071 5 2 33.64306 -116.62389  
071 5 3 33.53111 -116.59417  
071 5 3 33.55361 -116.59417  
071 5 3 33.57611 -116.59417  
071 5 4 33.53111 -116.56556  
071 5 4 33.55361 -116.56556

EXHIBIT 6SAMPLE PHOTO FLIGHT STATISTICS “.WRI” FILE

PhotoFlight Statistics File

Original file name C:\Program Files\XMap 4.0\MapDocs\area3.wri

Created on 08/10/2005 at 14:22:30

Companion file is

Comma seperated variable C:\Program Files\XMap 4.0\MapDocs\area3.csv

FocalLength 0.153000 m  
 PhotoFormat 0.230000 m  
 PhotoScale 1:15840

Trigger Points are calculated for a block flight

ForwardOverlap 20.000 %

SideOverlap 20.000 %

BreakDistance 4000.000 km

BlockExtend 60.000 %

Trigger Points are in an aligned grid (Aligned Photos)

FlightHeading 0.000

StartingOffset 0.000 m

Magnetic variation	E13.3
Area of coverage	79.809000 sq km
Distance between flight lines	1794.466 m (min) 2914.560 m (max)
Distance Block area extended	1748.736 m
Total flight line distance	53.273 km
Shortest flight line distance	9.686 km
Longest flight line distance	11.300 km
Path flight altitude	11800 ft
Trigger point count	38
Model count (Approx)	33
Flight line count	5

EXHIBIT 7SAMPLE EXPOSURE LOCATION “.CSV” FILE

*The “Average Flying Altitude in Feet Above Mean Sea Level” is for reference purposes only.*

Flight Line	Exposure # within Flight Line	Latitude Coordinate – DD.MM.SS.s	Longitude Coordinate – DDD.MM.SS.s	Average Flying Altitude in Feet Above Mean Sea Level	Ground Elevation in Feet
1	1	N3350016	W11650448	11800	4159
1	2	N3350539	W11650448	11800	3631
1	3	N3351461	W11650448	11800	4166
1	4	N3352384	W11650448	11800	4108
1	5	N3353306	W11650448	11800	3190
1	6	N3354229	W11650448	11800	2299
1	7	N3355152	W11650448	11800	2118
2	1	N3349094	W11649082	11800	3799
2	2	N3350016	W11649082	11800	4675
2	3	N3350539	W11649082	11800	4508
2	4	N3351461	W11649082	11800	3947
2	5	N3352384	W11649082	11800	3331
2	6	N3353306	W11649082	11800	2920
2	7	N3354229	W11649082	11800	1862
2	8	N3355152	W11649082	11800	1950
3	1	N3349094	W11647435	11800	4964
3	2	N3350016	W11647435	11800	5205
3	3	N3350539	W11647435	11800	4135
3	4	N3351461	W11647435	11800	3546
3	5	N3352384	W11647435	11800	3215
3	6	N3353306	W11647435	11800	2271
3	7	N3354229	W11647435	11800	1748
3	8	N3355152	W11647435	11800	1930
4	1	N3349094	W11646282	11800	6174
4	2	N3350016	W11646282	11800	5672
4	3	N3350539	W11646282	11800	4320
4	4	N3351461	W11646282	11800	3838
4	5	N3352384	W11646282	11800	3746
4	6	N3353306	W11646282	11800	2988
4	7	N3354229	W11646282	11800	1646
4	8	N3355152	W11646282	11800	1806
5	1	N3350016	W11645182	11800	7141
5	2	N3350539	W11645182	11800	6121

